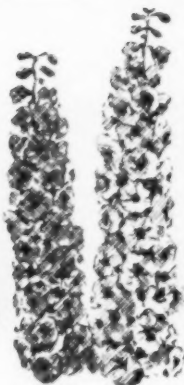


The Culture of the **DELPHINIUM**

L. H. MacDaniels



ALTHOUGH more than fifty species in the genus *Delphinium* are described in L. H. Bailey's *Garden of Larkspurs*, only a few are grown in the garden. The perennial delphinium, most commonly grown and usually referred to as the *Candle Larkspur*, is the one discussed in this bulletin.

During recent years many horticultural strains of delphinium have been produced by hybridization, among them the Hollyhock strain, the Wrexham strain, the Pacific Giants, and others. The tendency has been to develop tall plants with long spikes of very large flowers. Many of the types have to be handled as biennials because they do not persist in the garden under ordinary conditions, particularly in the North where winter injury is a problem. There is also an attempt to develop more permanent garden types.

Propagation

Delphiniums are propagated mostly by seeds but also by division and to a lesser extent by cuttings. In America, seed propa-

gation is the method most used. Buy seed from some grower or seedsman who has the desired strains, and never buy cheap seed. Plant the seeds in cold frames or deep flats filled with soil made of a mixture of about 50 - 50 garden loam and sand with very little organic matter. Do not use heavy soils. Soil sterilization is a great advantage. An easy way to sterilize soil is to use 2½ tablespoonfuls of commercial formalin (40% formaldehyde) diluted with 1 cupful of water for each bushel of soil. Sprinkle the solution on the soil, mix thoroughly, and place the soil in flats. After 24 hours, seeds may be sown. The seed is usually sown in mid-summer as soon as fresh seed is available, although it may be held over and planted the next spring. Plant the seeds ¼ inch deep. After you have planted the seeds, water the soil thoroughly. Cover the soil surface with clean burlap or shade the cold frames or flats with burlap or muslin to keep the soil moist until the seedlings appear above ground. Subirrigation of

the flats with fiberglass wicks is excellent if wick facilities are available.

After the seedlings have their first true leaves, pot them or space them 3 to 4 inches apart in flats or in a cold frame. Small plants are better wintered-over in a cold frame mulched with 1 inch of sand. In the spring or when the seedlings are large enough to handle, plant them in their permanent location or preferably in a nursery row. Here they may be held until they bloom and then you may make your selections for planting in the border or some other more permanent location. Plant the vigorous-growing types 2 or 3 feet apart.



Candle larkspur — large flower with contrasting dark center, "eye" or "bee"

Delphinium plants in the garden can be divided by digging the clump and cutting it into pieces, each of which has at least one good eye and well-developed roots. This is preferably done early in the spring as the plants are starting to grow. If possible, keep a ball of earth about the roots. Otherwise set them in a hole large enough to accommodate the spread-out roots and to allow good topsoil to be worked in around the roots and to be pressed firm. If you transplant the seedlings in the fall, set the plants somewhat deeper than in the spring and mulch them to prevent heaving by frost action.

Culture

Almost any good garden soil is suitable for delphiniums, provided it is well drained and in good tilth. Neutral soils are considered best, but the plants are tolerant of mild acidity. Because of the danger of root rot, it is considered good practice not to have excessive organic matter in the soil but to supply plant nutrients in the form of a complete fertilizer. The 5-10-5 or 6-12-6 or similar formula is satisfactory. In preparing the soil, dig the fertilizer into the bed at the rate of 3 or 4 pounds for each 100 square feet.

Well-established clumps may be fertilized with a top dressing of 5-10-5 or 6-12-6 fertilizer

at the rate of 2 to 3 pounds per 100 square feet. Usually, spreading a handful ($\frac{1}{3}$ teacupful) around each clump and watering it into the soil is satisfactory. You may make the application in the spring after growth starts and again in mid-summer when the shoots start growth for the second bloom.

Staking

Staking is an essential part of delphinium maintenance if you grow the tall-growing, large-flower types. Bamboo canes 6 feet long firmly set into the ground next to each spike are good. Set the stakes when the plants start to bud, and tie the shoots to them as they grow. It is rarely possible to tie more than one stalk to the same stake without giving the plants a "strangled" appearance, although with care individual strings from each stalk can be tied to a single stake to give some support. In the perennial border, plants with strong stems that are not so tall are to be preferred, but even these may be destroyed by strong winds or rains when they are in bloom. In choosing the site for the delphinium planting, select a sheltered spot, such as behind a hedge or other shrubbery, or some site where the wind does not have full sweep. Shade during part of the day is an advantage.



Candle larkspur — large flower, white throughout

Mid-summer Pruning

Delphiniums usually bloom twice a year, once from the shoots that start in early spring and a second time in late summer or early fall from the shoots that come from the base of the plant after the first set of shoots has flowered. After flowering, if you do not want seed, cut down the spring-flowering shoots, preferably after the leaves have begun to yellow. Cultivation, fertilizers, and water are usually needed at this time.

Pests and Diseases

In most parts of the United States, delphinium plants are not long-lived. This is due in part to winter injury and in part to

fungous diseases and to other troubles. In order to keep a good show of delphinium in the garden, you need a nursery in which to grow plants for replacement.

Probably the most damaging disease is known as *Sclerotium rot*, which causes the plant to wilt and die suddenly. The infected spike is blackened at the base and there may be web-like fungus apparent at the crown. Dig up such affected plants and remove them from the garden. Other delphinium plants should not be set in the same place.

Cyclamen mite is one of the worst pests. Its effects show up as distortion of shoots and blackening of the infected spikes. Cut off these shoots, destroy them, and spray the remaining plant parts with a rotenone spray or with one of the miticides.

It is beyond the scope of this bulletin to cover insect and disease problems in detail. Gardeners with special problems may obtain additional information

from the Department of Entomology (insect damage) or the Department of Plant Pathology (plant diseases) at Cornell University, Ithaca, New York.

In the fall in the garden clean-up, remove and destroy the old stalks. Hill earth up around the crowns and, as freezing weather comes on, protect the plants with evergreen boughs or coarse straw or excelsior. Never use any material that will mat down.

The culture of the delphinium is rather exacting and those who are really interested are inclined to be specialists. The American Delphinium Society is a good source of the most up-to-date information regarding the growing of this superb flowering plant. The secretary of the Society is always glad to answer questions. His address may be obtained from the Department of Floriculture and Ornamental Horticulture, Cornell University, Ithaca, New York.

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